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Poetry.

The Ship Canal.

FROM THE ATLANTIC TO THE PACIFIC.

Rend America asunder
And unite the Binding Sea
That emboldens Man and tempers—
Make the ocean free.

Break the bolt which bars the passage,
That our River richly pours
Western wealth to western nations;
Let that sea be ours—

Ours by all the hardy whalers,
By the pointing Oregon,
By the west-impelled and working
Unthralled Saxon son.

Long indeed they had been wooing,
The Pacific and his bride;
Now 'tis time for holy wedding—
Join them by the tide.

Have the snowy surfs not struggled
Many centuries in vain
That their lips might seal the union?
Lock them Main to Main.

When the mighty God of nature
Made his favored continent,
He allowed it yet unsevered,
That a race be sent.

Able, mindful of his purpose,
Prone to people, to subdue,
How to bind the lands with iron,
Or to force them through.

Blessed eyes, that shall behold it,
When the pointing boom shall veer,
Leading through the parted Andes,
While the nations cheer!

There at Suez, Europe's mattock
Cuts the briny road with skill,
And must Darien bid defiance
To the pilot still?

Do we breathe this breath of knowledge
Purely to enjoy its zest?
Shall the iron arm of science
Like a sluggard rest?

Up then, at it! earnest people!
Bravely wrought the scorning blade,
But there's fresher fame in store yet,
Glory for the spade.

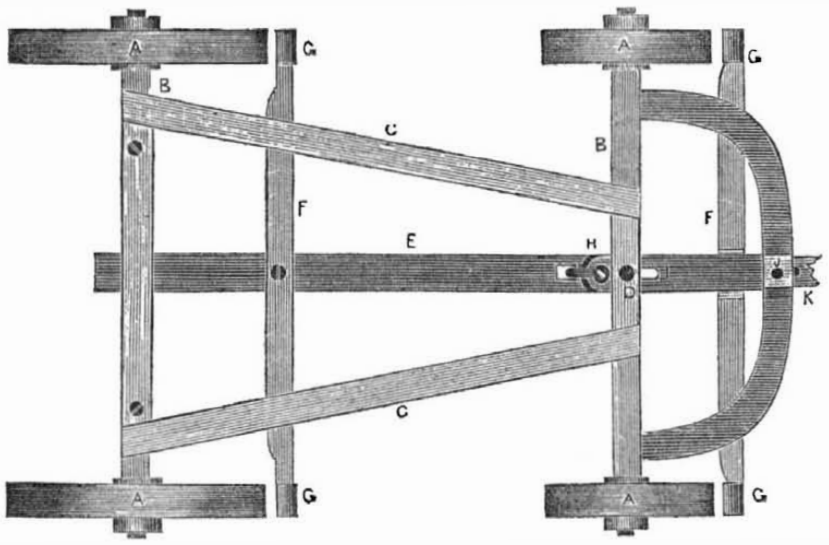
Ye, that vanquish pain and distance,
Ye, emmeshing Time with wire:
Court ye patiently forever
Yon antartic ire?

We that fight with printing armies,
Settle sons on forlorn track
As the Romans flung their eagles,
But to win them back;

Let the vastness not appal us;
Greatness is thy destiny.
Let the doubters not recall us;
Venture suits the free.

Cleave America asunder,
That is worthy work for thee.
Hark! The seas roll up imploring—
"Make the ocean free."

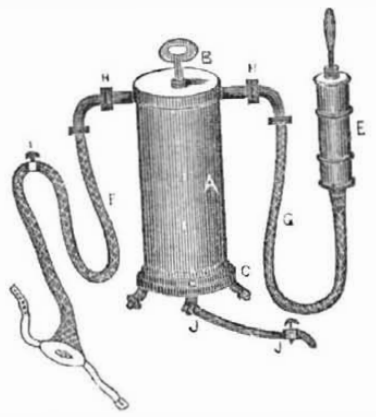
SELF-ACTING BRAKE FOR VEHICLES.



This is a self-acting Brake for vehicles, invented by Mr. John Boynton, of South Coventry, Ct., a well known inventor, and to whom we alluded a few weeks ago.

This is a top view of the wagon and brake—the best view for a proper understanding. A A, are the wheels. B B, the axles. C C, the carriage frame or bottom secured on the axles, or it may be on the bolsters, for carriages, &c. E, is the *reach* which unites the hind wheels with the pole K, which is represented broken off, all essential parts being shown. F F, are the brakes, and G G, the shoes of the brakes. The brakes are firmly secured to the reach and the pole, and the object of the invention, is to operate the brakes by the pole K, or the shafts, as it is as applicable to a one horse vehicle as a two horse one. The reach and the pole are united by a clevice at H, which from the way in which it is placed and the form of the ends of the pole and reach, allows the wagon to turn round with perfect ease. I, is a slot in the pole which allows the said pole to be moved out and in on the fixed bolt D. This cannot take place, however, without the shifting of the bolt J, and this simple thing operates the whole apparatus. In the pole are two bolt holes, one for operating the brake and the other to keep the pole steady when the brakes are thrown out of action. In the present position of the brakes, they are represented as being out of action, but if the pole K, was pushed farther in and the pin J, passed through the same top opening in the semi-circular guide frame, but through the second hole seen in the pole, this would bring the shoes G, of the brakes against the face of the wheels, and if the vehicle was descending a declivity, its weight would act upon the brakes creating a great deal of friction, retarding the progress of the vehicle. There may be some other modes of connection and a modification in the operation employed, but it is certainly very simple, and on that account a good invention. We have already mentioned, that measures have been taken to secure a patent.

Apparatus for Extracting the Poison from Wounds.—Hydrophobia and other kinds.



It is well known that the Indians frequently extract the poison by sucking, from wounds made by snakes. History furnishes us with a number of instances of the same kind, and one of the most beautiful, is that related of Eleanor, who saved the life of her husband Edward I. by sucking from his arm the poison left by a venomous arrow. It appears rational that the same process may be well applied to remove the poison of hydrophobia; and art can now successfully perform by the air pump, that which the natural machine performed for the celebrated English monarch. When a person is bitten, the first thing to be done, is to tie a tight bandage above the wound to prevent circulation, and then the part may be washed with water in which there is a little chloride of lime. But if possible the accompanying apparatus should at once be applied, or if that is not convenient, the person should be cupped. But this apparatus being very powerful, it should at least be kept in hospitals and such like places, and applied for a great effect after the other means have first been resorted to.

A, is a graduated glass cylinder. B, is a brass cap of it, properly affixed by wax or cement. C, is a cylindrical ring of brass cemented to the bottom of A. This ring has a thread upon it so as to screw into a thread on base or stand D. This joint must be made air tight by a washer of vulcanized india rubber. J, is a small flexible tube inserted in a small orifice in the centre of D. It has a small stop cock for discharging the contents of the upper vessel as often as required. Attached to the brass cap B, there are two small metallic arms H H, which must be air tight. G F, are flexible tubes, having a coiled tube of brass wire running through their interior, to keep them from collapsing. E, is an air pump attached to G. It is very simple and has only one suction valve, but has a small hole at the side of the case, upon which the finger of the operator must be placed every time he makes the upward stroke, but lifted off during the downward stroke, to discharge the air. There is a small stop cock I, on F, and the tube terminates in a trumpet mouth piece made of leather, which must be moistened before it can be used. This mouth piece is the sucker.

The air must be first drawn out of the cylinder A, by the pump E, and then the cock I, is opened, when the matter in the wound by the outside pressure of the atmosphere will flow into the cylinder in a continuous stream, which can thus be kept up for any length of time by working the pump. After this the wound is washed and dressed and the medicines administered—such as in the judgment of the practitioner are most suitable.

RAILROAD NEWS.

New City Railroad Project.

Mr. Randall, C. E., presented to our City Common Council on the 13th inst. a plan of a Railway to belt the city, running along the wharves, and not to interfere with passages for carts, &c. To render the plan available, says Mr. Randall, it is not necessary that the whole work should be constructed at once—as it might progress by degrees, in the first instance by a mere single track along the present streets on the North and East Rivers—the center of the track to be 70 feet from the fronts of the present stone houses along the wharves and connected by a single track through the large cross streets. In the full project six tracks are provided for—two for cars to go and return upon, two for others to load and unload upon, the remaining two for sidings and turn outs. This, in streets of the requisite widths of 200 feet, will leave a street of 60 feet in breadth for ordinary purposes along the tracks. The six tracks would occupy some 80 feet.

In this enlarged view, the plan embraces a spacious River Avenue, the additional width of the streets for which can be taken, when required from the present wharves and piers and from the Rivers. At the same time plans can be laid out for wharves and piers for the accommodation of shipping, packet lines, &c. outside of the new avenues throughout their whole extent, up the North, East and Harlem Rivers to Kings' Bridge.

The whole breadth of 80 feet over the six tracks of ground railway proposed, may when required, be covered with a flat roof, to be supported by substantial columns or pillars; serving as protection from the weather for merchandise, &c. which may have broken bulk and not yet have been removed to the store or the shipping. The roof, beside, being nearly level, and enclosed with balustrades, Mr. Randall says, will afford ample space for elevated promenades, and may also as well as the 60 feet spaces on each side, be used for Elevated Railways. By these merchandise could be delivered in the second story of the store houses.

There is something about this project which strikes us very favorably. It is very evident to those who see the crowded state of our public streets, that some plan of this kind must be resorted to, at no distant day.

Land Sunk.

The Worcester Spy has a long series of particulars of the recent phenomena at Westbrook, (Mass) where on the 14th inst. some forty (instead of eighty) acres of land vanished, giving place to a lake and a tract of blue plastic clay. There is missing says the Spy some twenty acres of woodland, and about the same quantity of pasture land. Over this whole extent the natural soil has entirely disappeared and in its place is clay. The woodland was covered with a heavy growth of timber, the whole of which has sunk below its original level some thirty feet, leaving perpendicular walls on three sides, and gradually sloping on the other side. The trees on a portion of the land have disappeared entirely, and on another portion they are thrown about in great disorder.

A German woman has recovered $200 damages for injuries from the Troy and Schenectady Railroad.

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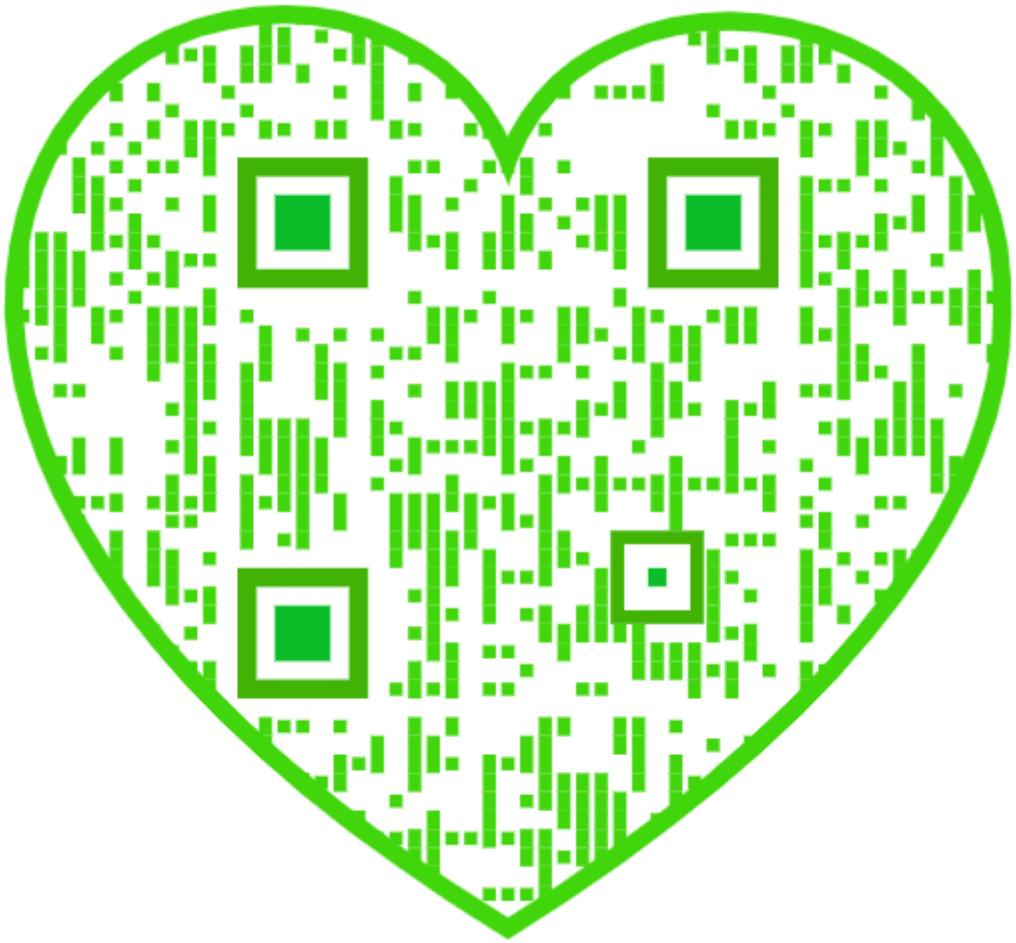

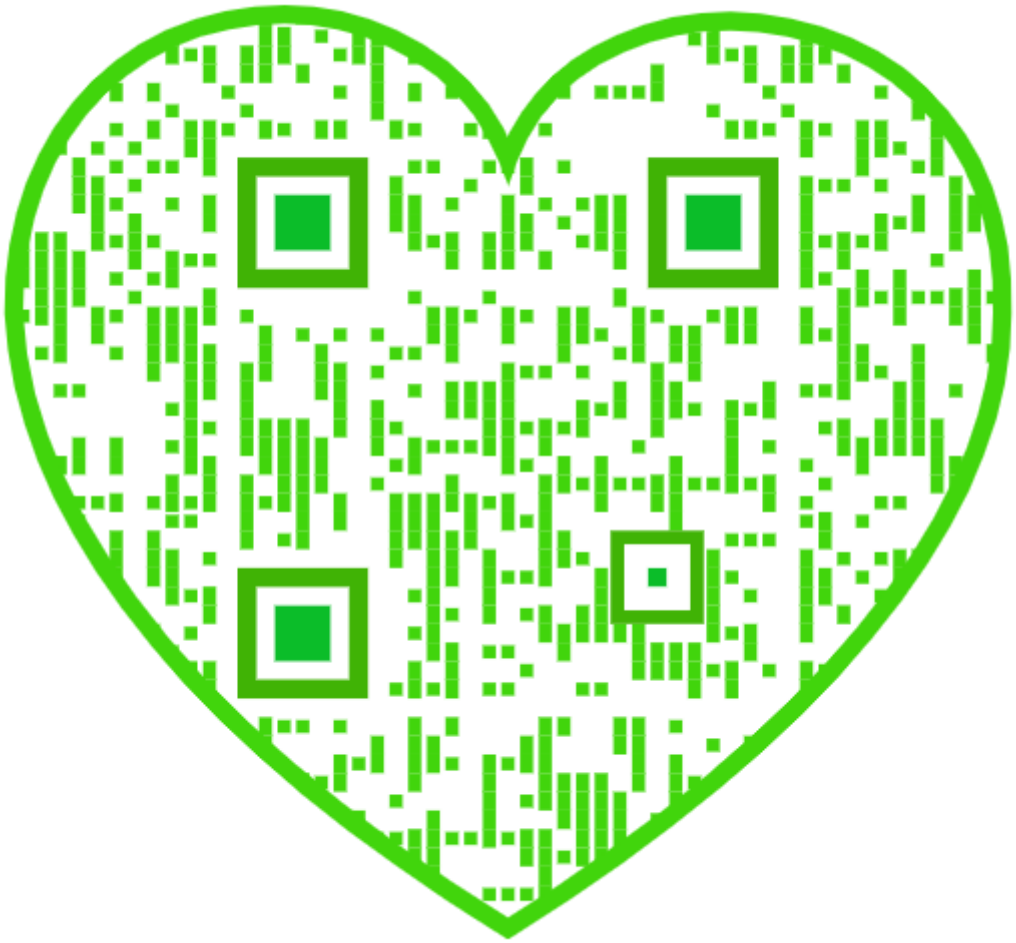

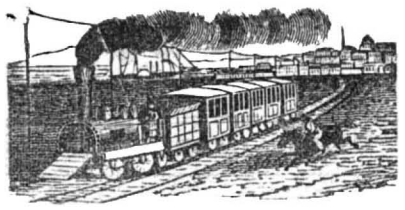

Reported Cases of Cholera.

Thursday,	June	21 —30	new cases,	14	deaths.
Friday,	"	22—26	"	14	"
Saturday,	"	23—38	"	16	"
Sunday,	"	24—38	"	21	"
Monday,	"	25—47	"	28	"
Tuesday,	"	26—73	"	38	"

It will be seen by the above that the disease is very mild, and many believe that the real cases of cholera are much magnified in the above list. The eminent physicians of the Board of Health have been very successful in treating the disease and they have said, that more might have been cured had they not been tampered with before coming to the hospitals. Many strangers have sought refuge in our city from the sickly places in the South and South West.

California.

Since the California excitement first broke forth in the early part of the present year, hundreds of the young men of this country have hastened with joyous anticipations and hopes to the glittering fields of "El Dorado," braving the dangers consequent upon the journey, and the privations of a newly discovered country, with the expectation that a fortune could easily be acquired and a return home sure. We have carefully watched these movements, and bid adieu to several cherished and never to be forgotten friends, not however without the unpleasant reflection, that some of them would "repose beneath the spot where the tear of kindred would never bedew," we were forced to this conclusion from the fact that they were so situated here that hardship and want scarcely dared venture to come near; indeed they were surrounded by cherished friends, and all that could render life comfortable.

We have never doubted the richness of the "placers" but *we have* doubted the ease with which they are made to yield up their treasures. Wherever we find large mineral deposits and mountains of wealth, we find them almost bidding defiance to the skill of man, and the surrounding country barren and unyielding in the extreme. A careful study of the resources and condition of California as developed in the late correspondence from that country, forces the conclusion that many of the adventurers are bound to be disappointed in their expectations, as extracts from several letters to the Courier and Enquirer, dated at San Francisco about the middle of April will show. We should think the correspondent was a shrewd observer of the condition of things as they actually exist.

"You will observe (says he,) that none but hale, hearty, stout, well knit and healthy men need come out here for gold. And two-thirds of these (let me warn them in time) will lay their bones where they go with the hope of accumulating fortunes. My reasons for thinking thus must be obvious enough to persons at all acquainted with the country.—When the unhealthy season sets in at the placer, the temptation for augmenting one's *heap* is too strong to be resisted. As each individual imagines that he will escape, or, at any rate, that the chances are somewhat in his favor, none leave until a raging fever has taken a strong hold, when, in most cases, it is too late to depart. But this is useless. No warning from me, or any body else will turn the tide; and I fancy that every person coming to California, intends to take this at the flood, feeling confident that it must "lead on to fortune." But I know, from actual observation, that the tide runs both ways out here. There is an ebb, as well as a flood.

"If any suppose that gold can be procured without labor, and that of the severest kind, they are, I assure you, very much mistaken. Why, laying water or gas pipes in the streets of New York is not half as toilsome work.—No man should come to this country with the expectation of making his fortune at the mines by getting out gold, but such a one as feels fully able to dig about half a dozen graves a day, taking a cold bath every fifteen or twenty minutes during his work, and whilst in a profuse perspiration, and that without injury to the constitution. It would not be a bad plan to practice this, for a month or two, on the banks of some river, before leaving the United States."

The toils of mining are severe, the privation great, and sickness prevails throughout all the mining districts. "The same irregularity of life, which is almost a matter of course at the diggins, when the want of the right kind of food is considered with it, would produce sickness any where. It costs to be sick, with one visit a day from a physician, and *without comforts* of any kind, $600 to $1,000 per month. Some gentlemen are now talking of putting up a tent hospital as a speculation, at the mines."

Provisions of all kinds are very high, as the following statement will show: "milk, 5 shillings per quart; eggs, 4 to 6 dollars per dozen; beef, 1 to 2 shillings per lb.; raisins, 12 dollars per box; flour, 16 to 20 dollars; pork, 25 to 30 dollars per bbl.; potatoes, which by the way have not found their way to our table, 10 cents per lb. Go to the Restaurant—call for beef steak and a cup of coffee, you pay $1,50—add an egg, and you will be charged $2,50. Buildings 12x14 ft. of common boards, bring 30 to 75 dollars per month.

"The gold washings (*oro placers*) continue to yield as rich a profit as ever. Industrious and economical laborers make very high wages, so much so as to enable them, in a couple of years, to retire with enough to make them comfortable. But the ease with which money is made in this country leads to the most horrible dissipation. Gambling, drunkenness, and other evils are the order of the day. As yet no serious difficulties have occurred in the country. Some few murders have been committed, but in nearly every instance the murderers have been caught and executed. The very little authority possessed by the present government has been judiciously exercised in the preservation of order; but I fear its power will not be sufficient for the vast population which is pouring in upon us."

The Mormon Manifesto.

This singular sect, who moved to the great Salt Lake valley after expulsion from Iowa, Missouri, and Illinois, have published their first manifesto to all their brethren throughout the world. It is a curious document, containing a strange admixture of sense, cant, shrewdness and impiety, together with many quite interesting details respecting the region in which they have taken up their abode.—They have commenced the erection of a city on a grand scale, which is divided into nineteen wards, consisting each of nine blocks, each three square. They are to have a council house, bridges, bath houses, schools, colleges, and all the institutions of civilization. A gold mine was discovered, it is said, by a party of them who had gone on an exploring tour through the northern part of Western California. John Smith, the uncle of Joseph, has been ordained "Patriarch of the church." The cultivation of large tracts of land had been commenced. No doubt a prosperous settlement will grow up in this distant region, opening up a fruitful subject for the speculations of those who are interested in such inquiries.

The Moustache.

The moustache, though of foreign origin, became naturalized among us during the Mexican war, and since then almost every one who trod the territory of the Montezumas, if it were only in the capacity of a mule-driver, delights to sport his bushy moustache. Even militia captains and corporals, who never crossed the Gulf, prodigiously affect this facial *ornament* There are some men who defend the moustache upon principle, discomfitting all their opponents by the overwhelming argument, "nature placed the mous ache where it is for the purpose of being worn,"—excellent argument, and it would be well for all the moustachees to carry out the principle a little farther, such as to houses and clothes &c., nature did not produce them any more than a razor to clean a man's chin.

Magnets.

Mr. J. Prime of Washington, N. C., writes us in reference to the article from his pen on Mariners Compasses, represented in number 37 Scientific American. The engraving, as he supposes, was an artistic error. It should have represented a rectangular bar with square ends instead of the Surveyor's needle. The false lines of direction should have been represented within the bar not outside of it, and the new point lies in the discovery of the rectangular bar with square ends, sometimes becoming diagonal instead of the line of direction being always parallel to the sides of the bar. There is much in the magnet that is still mysterious; all the knowledge that has been gained on the subject has been by observation and experience. We regret that the figure in No. 37 was incorrect, but this will explain the matter.

Knowledge.

Knowledge is its own exceeding great reward. It is not the gift of colleges, particularly. It is what the mind produces whenever it acts. Great schools are chief appliances for the lazy, to furnish substitutes for knowledge by which they may make their way in the world. The youth who has a noble thirst for science is not so much benefited by a "liberal education" as he is apt to imagine he will be before trying it. If your parents are rich, and have nothing better to do with their money, let them board you at Cambridge or Yale for four years. But if they are poor, laboring people, stay with them and labor too. But don't the less strive for a liberal education.—Be liberal in supplying yourself with books and time. Journey on foot, and study nature and men.

Cotton Consumption in the United States

In 1642 the consumption of cotton in the U. States was 300,000 bales, and in 1848, 600,000 bales. Eighty-three years since there was not a spindle on the continent of America—whereas there are now in five of the New England States not less than two millions of spindles. Vast as the number is in the country, they promise to increase in full proportion to its growth. The cotton crop of 1848 was 988,099,083 pounds: supposing six cents per pound, which is liberal, to be returned to the planter, the sum realized from the crop is in round numbers, $60,000,000. The capital required to grow this cotton, including the cost of land, negroes, horses, mules, gins, etc. etc. would be at least $300,000,000.

Important Decision.

In the United States court in New Orleans, Judge McCaleb presiding, it has been decided that money in bank, deposited by an auctioneer, though in his private name, cannot be attached for his own debts. The auctioneer being a public officer, the money of his constituents cannot be made liable for any of his private engagements, agreeable to articles 2,582 and 2,583 of the civil code.

Snuff and Plants.

Tobacco dust (fine snuff,) is said by Prof. Mapes to be a complete preventive to plants against destructive insects. The way to use it, is to dust a little of it over the surfaces of the plants. The rose bug, and thrips on grape vines, he says, all yield to the influence of snuff, and the most delicate plants of the hot house are not injured by its application.

Coal in the West.

Capt. Dent on his tour to Santa Fe to Fort Smith, Arkansas, has discovered a mountain nearly all composed of bituminous coal.—Throughout the whole country there is abundance of coal.

The Edenton (N. C.) Sentinel speaks of having been presented with a fine ripe watermelon, a few roasting yams, ripe tomatoes and cucumbers.

Fans propelled by the steam engine have been set up in the New York Sun Establishment. This is a good way to ventillate large establishments in warm weather. It promotes health and comfort.

Lard, or tar, will cure cattle that may be hoven with eating clover. Put two or three table spoonfuls of tar in the mouth of the animal and it will be relieved almost instantaneously.

Extraordinary Hail Storm.

The Muncy Luminary and Bloomsburg papers state that a hail storm passed over parts of the counties of Lycoming, Columbia and Luzerne, on Sunday last a week, which for the size of the hail that fell, is the most extraordinary that has ever occurred in that region. In Muncy and its vicinity, it was not uncommon to see them the size of a man's fist. They measured 8 and 9 inches in circumference, and weighed as high as 6 ounces. Glass in the windows was broken and the crops injured. There was but little wind with it.—In Columbia and Luzerne counties the crops were greatly injured by it. Some of the farmers lost their all.

Importance of Plank Roads to Farmers.

Scientific experiments have proved that the same power required to move one ton, in a common lumber wagon on a level earth road will move the same wagon with a load of 4 1-3 tons on a level wood surface.

Costly Boiler.

The steam boiler which is being made in Philadelphia, for the United States frigate now in progress of construction of the Brooklyn Navy Yard, is composed of 75,000 pounds of pure copper, and will cost $30,000.

We believe that all the boilers of the Oriental Steam Company vessels are made of copper.

Discoveries in Constantinople.

A letter from Constantinople states that important repairs are making in the grand mosque of St. Sophia, which are to be completed by the approaching festival of Ramazan. In the course of this work, a large Mosaic was found representing the Virgin commending the City of Constantinople to the protection of Constantine, and the Church of St. Sophia to the protection of Justinian. This monument is in a perfect state of preservation.

Druidical Remains.

A curious monument of the religious rites of the ancient Gauls, has just been discovered at Suevres. It is an immense block of stone which various indications show to have been used at the human sacrifices of the Druids.—The little City of Suevres contains many other interesting monuments of the times of the Romans and of the middle ages.

Old Frescoes Found.

A discovery interesting to the friends of art, has been made by an amateur in the parish church of Bourg, at St. Michel. He has found frescoes of the sixteenth century covering the walls, and also the columns and perhaps even the arches, which have been long concealed by a thick coat of white coloring, that can be taken off by well-known processes without injury to paintings of this kind.

O'Connell's Library.

The sale of O'Connell's libbrary greatly disappointed his family and admirers. The books hardly brought the average price of auction sales.

Sir John Franklin.

The board of Officers to whom was referred the proposition for fitting out an expedition in search of Sir John Franklin, have reported against its feasibility. The government has no vessel suitable for the purpose, and there is no authority to purchase new ones.

A Great Speculation.

The best speculation in California of which we have heard was that of a loafer who stole a hen, and invited four returned miners to dine upon her, at the reasonable rate of five dollars each. In preparing the hen for cooking our loafer found in her craw two ounces of gold. After partaking freely of the hen, the loafer found the following to be the profits of the transaction: For four guests at $5 each, $20 for two ounces of gold found in hen's craw, $35—Total profits on hen, $52.

A large Bald Eagle was captured alive last week in the Potomac, between Alexandria and Washington. He lit upon a stick in the river having a hook in it, which went through his foot

The common article of dress in California is a coffee sack, with holes cut for the head and arms of the wearer. Another evidence of Anglo Sacks-on ingenuity ahd energy.

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The Mineralogist.—The description and locality of every important Mineral in the United States.

(*Continued.*)

SAHLITE. (BAIKALITE.)

Occurs massive and crystallized, of a dingy green color; shining lustre; specific gravity of 3; cleavable; infusible; easily breaks.—Found at N. and W. Haven, Ct.; Monroe, Ticonderoga, Lake Champlain, N. Y.

SCAPOLITE. (WERNERITE.)

Occurs in crystals and cleavablemasses, of a grayish white color; foliated structure; specific gravity of 2 5; pearly lustre; translucent; scratches glass; fusible; intumesces; decomposes. Found at Bolton, Mass.; Cold Spring, West Point, N. Y.; Baltimore, Md.

COMMON SERPENTINE.

Occurs in masses, of a greenish color; specific gravity of 3.40; yields with difficulty to the knife; infusible, but turns white; often argillaceous. Found at Grafton, Vt.; Newport, R. I.; Hoboken and Compton Plains, N. J.; Westchester, Montgomery Co. Pa.; Bare Hills, Md.

PRECIOUS SERPENTINE.

Occurs in masses, of a green, yellowish or blackish green or brown color, often clouded; translucent; unctuous; yields to the knife; softer than the preceding; specific gravity of 2.20; lustre glimmering; receives a polish. Occurs abundantly at New Fane, N. H.; Middlefield, Newburyport, Mass.; Newport, R. I.; Milford, Ct.; Philipstown, N. Y.

SILLIMANITE.

Occurs in crystals, of a dark grey color; lamellated structure; specific gravity of 2.4; translucent on the edges; harder than quartz; brittle; reducible to powder; insoluble; infusible. Found at Humphreyville, Chester, Ct.; Chester, Pa.

NATIVE SILVER.

Occurs massive, crystalized. retiform, dentiform, vamose, and in thin plates or leaves and fine threads, of a white color, and lively brilliancy; specific gravity of 10; exceedingly malleable; fusible; soluble in aquafortis. harder and more elastic than gold or tin, but less so than copper, platinum or iron. A cubic foot weighs about 600 lbs. Found near Portsmouth, N. H.; Huntington, Ct.; with bismuth; near Sing Sing, N. Y. in a vein.

SULPHURET OF SILVER.

Occurs crystallized, amorphous, vamous, retiform, and in plates of a dark lead gray color, and metallic lustre; specific gravity of 7; fuses with intumescence and odor of sulphur; rectile; malleable. Found at Livingston's lead mine, Columbia Co. N. Y.

CLAY SLATE.

Occurs in masses of a reddish, brownish, bluish or greenish color; slaty structure; glimmering lustre; specific gravity of 2.50; yields to the knife; fusible; does not adhere to the tongue. Found at Hartford, Windsor, Suffield, Ct.

GRAPHIC SLATE (BLACK CHALK.)

Has a slaty structure; black, grayish or bluish black color; earthy fracture; specific gravity of 2.14; leaves a trace on paper and on wood; soils the fingers; opaque. Found in Rhode Island with anthracite; also on the Susquehanna River, Pa.

SATIN SPAR.

Is a fine fibrous variety of carbonate of lime, having a white, yellowish, or reddish white color, and pearly lustre; translucent; often chatoyant; bears a polish. Localities: Newburyport, Mass.; Cumberland Valley, Pa.; near Baltimore, Md.

SPINEL.

Occurs in crystals and grains, of a red, dark brown or black color; great hardness; scratching quartz; specific gravity of 3.7; translucent or nearly opaque; lustre vitreous; lamellated structure; infusible. Found at Bolton, Littleton, Roxbury, Mass.; Warwick, Munroe, N. Y.; Hamburg, N. J.

STALACTITE.

Is a pendent cone or cylinder of carbonate of lime, often with a rough, warty surface, fibrous fracture, often radiating; translucent. Found attached like an icicle to the roof or sides of caverns in limestone regions.

SPODUMENE. (TRIPHANE.)

Occurs in laminated masses, of a grayish or greenish white color; shining lustre; specific gravity of 3.19; translucent; scratches glass; exfoliates into little grayish or yellowish scales, and then melts. Found at Goshen, Conway, Chester, Lancaster and Stirling, Mass.; at the latter place in granite.

STALAGMITE. (ALABASTER.)

Is a deposit of earthy or calcareous matter, made by water dropping on the floors of caverns; color, white or yellowish; translucent; structure foliated, fibrous or compact.

STAUROLITE. (GRANATIT OR GRENATITE.)

Occurs in crystals, of a white, gray, red or brown color; often translucent; scratches quartz: infusible. Found at Winthrop, Hallowell, Sidney, Paris, Me; Middlefield, Cummington, Chesterfield, Northfield, Sheffield, Mass.; Franconia, N. H.; Putney, Chester, Vt.; Bolton, Litchfield, Haddam, Harwinton, Ct.; New York City; near Baltimore, Md.

Motion.

BY B. F. STICKNEY.

No. 3.

In the two preceeding numbers, we have endeavored to show that there is an all prevading fluid, known by different names, dependent on the various circumstances under which it appears. That it has an inherent perpetual motion, from which all motion is derived; it is in rapid motion, or at rest, in conformity to the combination or circumstances. That it has more affinity to some bodies than for others; some are called conductors and others non-conductors. Between pure carbonic acid gass, and this fluid there is no affinity.

Something more than fifty years ago, we had been making some experiments that required carbonic acid gas, and we had taken a coated jar, that stood convenient on the table that belonged to an electrical battery, to contain carbonic acid gas. Sometime subsequent we had a call to use this jar for electricity, not knowing that the carbonic acid gas would repel electricity I found that the jar could not be charged with the electrical fluid. We filled the jar with water and poured it out and dried it, when we found no difficulty in charging it.

Hydrogen, Oxygen and Nitrogen have an affinity for this fluid. Between Hydrogen and Carbon, there is a strong affinity; and when they are united, the fluid in question has some degree of affinity for them when combined. But the carbon and gas prevailing to a certain degree, appears to have a tendency to check or diminish the motive power of this fluid in animals, and perhaps in all other substances. Physicians make use of the words Malaria, (bad air) and Miasma, without explaining what they mean by it.—They do not tell us what elements constitute their bad air. When I make use of either of these terms, I mean a certain portion of carbonic acid gas, united with a certain other portion of hydrogen gas, these with the common atmosphere, composed of oxygen and nitrogen, make bad air. To make ourselves more clearly understood, we will say, that two parts hydrogen gas, united with one of carbonic acid gas, mixed with the other elements of the atmosphere, would probably produce the ordinary inflamatory disease of a new level fertile country, such as we inhabit.—And equal portions of carbon and hydrogen mixed in the atmosphere, in something more than the ordinary proportion, would be likely to produce cholera, malignant cholera asphyxia. The common cholera morbus we we consider, only a less malignant cholera.

During the cholera of 1834 in the United States, we had extensive opportunities of making experiments and observations upon the disease, and its causes. When it was first reported that the cholera was in Detroit, I resided in Toledo, as at present. I had not then seen a case. I went to Detroit to observe its character, and if possible to ascertain its cause or causes. I remained a week, in company with three others, (we visited all the cases we heard of, Dr. Henry, Gen. Larned and a Mr. Browning,) at the end of a week, we were all attacked with the diarrhœa, about the same time. I was attacked just at the time of starting for home. As I subsequently understood, the other three within four days were dead. I took a little laudunum, by which the diarrhœa was held in check until I arrived at Toledo. I now had become well satisfied, that a more than ordinary charge of carbonic acid gas in the atmosphere was the cause, alkalies were probably the best remeey. I now took alkalies and the diarrhœa ceased. There was no cholera at Toledo that season, except two cases of persons coming in from Lake Erie with the disease, who died here. There has been no cholera at Toledo at any time. During the summer of 1834 there was much more disease than usual.

We remained at Toledo, one day and a half and left for New England according to previous arrangement. We took a steamboat to Sandusky City, remained there that night; before day, in the morning, was attacked with diarrhœa, and some spasms. At break of day I was able, with some difficulty to walk to a druggist, and obtained a pound of common prepared chalk. In about half an hour, I took about one-fourth of it in water, and the diarrhœa and spasms left me immediately. There were now a few cases of cholera at Sandusky.

About six o'clock, I left in steamboat for Buffalo. I went to my berth about eight, and at nine, I was attacked again with more violent spasms. I again resorted to the chalk, and again was relieved. There was one man taken with cholera, the next birth but one to me, carried on deck, and soon died. I arrived at Buffalo, remained two weeks, attending to business, without a symptom of disease. There was much cholera at Buffalo at this time: I saw a few cases. I passed on to Rochester in Canal Boat, left Lockport at ten in the evening. When within twenty miles of Rochester, from a break in the canal, the water was drawn off, and something after midnight we were put on board of carriages for Rochester. I felt a severe chill on leaving the boat and coming to the night air. When within about six miles of Rochester, I had oppressive diarrhœa, and some spasms. On arriving at Rochester, it was important to conceal my situation. There were so many cases, that the people were alarmed, and believing it to be contagious, they were not willing to admit a person with cholera to shelter. I succeeded in getting to my room without having it discovered that I had the alarming disease; and a daughter who was with me My case now became one of extreme severity; diarrhœa and emetic discharges very copious—extreme spasms, and almost suffocation—the surface became purple from congestion—I was helpless—my daughter mixed chalk and water, and fed me with a spoon, until I took more than half a pound. Within 15 minutes after beginning to take the chalk, the spasms and pains ceased. Now a profuse cold sweat ensued. My pound of chalk was now exhausted, and fearing a return of the spasms, I sent my daughter for more, and I took probably a fourth of a pound more. I had no more spasms.

The next day, my daughter was attacked and in a few minutes from the first symptoms the spasms and other evidences of the disease were very violent. I administered the chalk to her, as I had taken it myself; and it soon gave her relief. Many others took alkalies, by my recommendation, and always with success. In all the other cases, they took carbonate of soda.

Anglo Saxon Stock.

Cicero relates, that the ugliest and most stupid slaves in Rome came from England! Moreover, he urges his friend Atticus "not to buy slaves from Britain on account of their stupidity, and their inaptitude to learn music and other accomplishments." With Cæsar's opinion of our ancestors we are, perhaps, some of us, not sufficiently acquainted. He describes the Britons generally as a nation of very barbarous manners. "Most of the people of the interior," he says "never saw corn, but eat milk and flesh, and are clothed with skins." In another place he remarks:—"In their domestic and social habits, the Britons are as degraded as the most savage nations."

This is no overdrawn picture. Our ancestors dwelt in caves like wild beasts, or in huts of no better construction than the miserable tent of the most savage indian.

The loss on the Western waters last year amounted to $2,000,000, only one million of which was insured.

Opposition to Inventive Experiments.

There are very many persons who fix their exclusive attention upon the immediate inconvenience which must necessarily result from every change, and cannot or will not discern the greater ultimate good. When railways are introdnced, post horses will be thrown out of work, and their owners, as well as the farmers who supplied them with oats, will suffer for a time. The King of Oude was persuaded by the British residents to build watermills; but soon after the prince had done so, he ordered them to be destroyed, from a sincere pity for the many decrepid people who had been employed in grinding grain at the hand-mills; thus depriving his whole people of cheap bread, who by saving money upon this article, would have obtained means to employ additional labor, and that of the decripid people among the rest. So, on the introduction of hops into England, the city of London petitioned against their use, lest they should injure the beer; and with equal wisdom, the Kentish Farmers, whose land was overrun with coppice, and who are now so largely benefited by their cultivation, objected to their growth "because they occasioned a spoile of wood for poles."

Nay, when Parliament, under Walpole's administration, was passing an act to improve the roads, serious riots disturbed the peace of London, because provisions would be brought to the city from distant parts, and leave the metropolitan gardens unprotected; and Shaftsbury was treated as a traitor to his country, by the ruling party of the "country gentlemen," in Parliament and out of it, because he had proposed to lower the duty on Irish beef! Many improvements, indeed, have been opposed, upon grounds as rational as those stated by old Mause, in objection to her son Cuddie Headrigg's use of the barn-fanners for winnowing wheat, when lately introduced at Tillietudlum:—"Your leddyship and the steward hae been pleased to propose that my son Cuddie suld work in the barn wi' a newfangled machine for dighting the corn frae the chaff, thus impiously thwarting the will of Divine Providence, by raising wind for your leddyship's ain particular use by human airt, instead of soliciting it by prayer, or waiting patiently for whatever dispensation of wind providence was pleased to send upon the sheeling hill."

Contempt for a Traitor.

On the second of July, 1792, Lord Lauderdale, attended by Charles J. Fox, Esq, met Bendict Arnold, attended by Lord Hawke—Lauderdale received Arnold's fire unhurt, and refused to return it. On being asked why he did not, replied, "I leave him for the executioner!" The seconds retired for a few minutes, and said that Lord L. must fire at General Arnold, or retract the expression he had used. The nobleman then replied, "that he did not come out to fire at Arnold, and if he (Arnold) was not satisfied, he might fire at him till he was." The cause of the quarrel was this: A gentleman was about to introduce Lord Lauderdale to Gen. Arnold when the former exclaimed, What! the traitor Arnold?

This Lauderdale was a descendant of the famous brutal Scotch persecutor of the same name, but no taint of the father was found in the descendant, who was in parliament called the brilliant Scotch Wit. The working classes of England, however, had no cause to admire him, in regard to his action on the passage of the famous "Corn Laws."

Adam's Will.

In about 1534, at a time when the Kings of of Spain and Portugal were making extensive discoveries in America, they raised a great hue and cry against the French who was fitting out an exploring expedition upon the St. Lawrence, for what they termed interference and intermedling.

"What!" said the king of the French, who was informed of their pretensions: "They coolly divide out all America between themselves without permitting me to share as a Brother! I should like to see the clause in Adam's Will which bequeathed to them alone this vast heritage!

Truth is better policy than expediency, but it is mistaken by weak minds for a glow worm.

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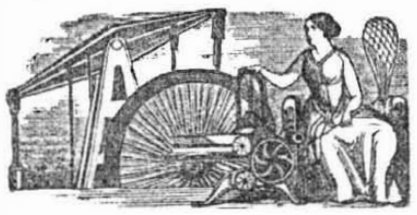


New Inventions.

Improvement in Wool Carding Machines.

Messrs. Jackson & Moir, of Cazenovia, N. Y., have made some new and excellent improvements on Carding machines, which they have introduced into the Cedar Grove Mills Factory, and have tested the same for a number of months with the most gratifying results. Attached to the condensing carding machine they have combined machinery for reducing the roping, drawing it with twist, but finishing it free from twist prepared for Jacks or other spinning machinery. The motion of the condensing cylinder is different from any other in use, but the benefits of drawing the roping on the frame by using the only way to do so, viz. while in the twist, and then untwisting and leaving it in a beautiful roll, will be apparent to all who are acquainted with the business. They have taken measures to secure a patent.

Railroad Smoke Gun.

Mr. Josiah Magoon, of Hookset, N. H., has invented a new mode for expelling the smoke from locomotives, so as to prevent it annoying the passengers, a thing of too common occurrence. We alluded to the invention of this gentleman and pointed to a similar one of Dr. Townsend—the difference between the two being this, that the joints of Mr. Magoon's were made, one a bell mouthed tube and the other made to slide into it—self-coupling joints. We must say that the same ideas were presented to the mind of Dr. Townsend—but the new mode of Mr. Magoon is quite different from either. The principle of this invention is to blow the smoke into the air by atmospheric pressure, sending the smoke far above the cars and thus removing any annoyance to the passengers. The apparatus consists of galvanized sheet iron with a bell muzzle at the outer end, just so small as to let the smoke pass which will be forced out by the pressure of the atmosphere at its narrow end when the cars are in motion. The Smoke Gun is therefore a simple apparatus connected with the smoke pipe of the locomotive by screw bolts and the outer end tapering upwards to raise the smoke high into the atmosphere. Mr. Magoon believes that his smoke gun will at a very trifling expence be a complete curative of the evil alluded to. A fair trial would be the best way to test its merits.

New Stave Jointing Machine.

Mr. D. Vaughan of Remsen, in Oneida County, N. Y., has made a valuable improvement in a shaving jointer for staves of every description, such as for hogsheads, barrels, tubs, &c. He uses only one plane or shaver which can operate either as a stationary or moveable cutter, and in combination with this he employs a guide fence on each side, which can be set for the diameter of the hogshead or barrel, so that by having a clamp in which the stave is set and held to the shaving iron, the guide fence will direct the shaver to joint the stave with the exact bevel required according to the size of the barrel, be it either one, two, or three feet in diameter. This quick plan of setting the machine to cut the bevel according to the diameter of the vessel which the staves are designed to make, is a most excellent improvement. The guide fence can be set to shave or plane the straight edges of boards as well as the tapering edges of staves. Measures have been taken to secure a patent.

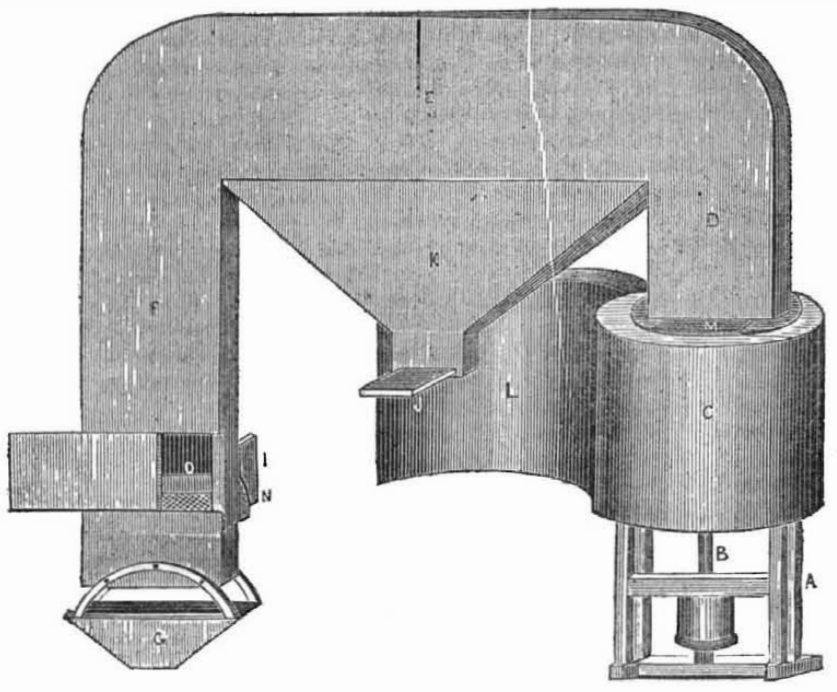
Machine for Turning Umbrella Sticks.

Messrs. Solomon West & Hiram Plumbe, of Honesdale, Pa., have invented some useful improvements in turning umbrella sticks, which will lead to cheapness in those articles. Every improvement which leads to the production of such articles for a less price, be it ever so small, is a general benefit.

Steel Tubes.

A French engineer, named J. O. York, has recently taken out patents in France and England, for making tubes of steel for the flues of steam boilers, as being less expensive than brass used for that purpose. He first casts the steel in the form of a thick short length with a diameter of the same size as the tube is wanted to be when finished. This tube is afterwards drawn between a series of grooved pairs of rollers placed opposite one another like rolling iron, but one pair receives the tubes at once from the preceding pair, and each pair from the first set have grooves of a slightly decreasing diameter to form a perfect tube. The short thick cast tube, before it is drawn, is heated to the required degree and placed on a steel mandril, which is the more easily effected, if the bore is a little larger than the finishing tube. The short tube is then placed between the first pair of rollers and is somewhat reduced in diameter, but drawn out in length. When the tube has passed the first set of rollers, it receives a quarter turn by the attendant before it enters the next pair and then the rolls act on it in an opposite direction to draw it out more effectually The distance between each set of rolls should be somewhat greater than the length of the tube, and the number in the series of rollers must be limited with the heat retained in the tube. It is our opinion that steel tubes are inferior to iron ones, and both of them inferior to those made of brass. It is wonderful to see so many patents taken out in London, where every one costs the inventor a sum not less than $600 and frequently far more than this.—They must surely be well protected. Six hundred dollars will cover the expense of 12 American patents, allowing $20 for expences besides the patent fee.

IMPROVEMENT IN GRAIN SEPARATORS.



This Machine is an improvement on Grain Separators, invented by Benjamin D. Sanders of Hollyday's Cove, Va., and it is designed to separate the impurities in threshed grain upon the reverse principle from the action of the common Grain Separators. Instead of blowing or forcing by the blower, the chaff, &c. from the good grain, he forms a vacuum the power of which can be regulated at will, to raise the chaff and every thing specifically lighter than the good grain up into a receiver or light grain hopper, while the good grain is never raised off the screens but passes over them and falls into a grainary below. A, is a frame to sustain the blower, which is confined in the cylinder C. B, is the shaft to drive the blower by the drum below. D, is an air tight trunk connected with the blower, and E, a horizontal trunk, and F, a perpendicular trunk, which is placed above the receiving hopper of the uncleaned grain. G, is the receptacle for the good clean grain. J N, is the place where the uncleaned grain is introduced, the opening of which is regulated by a slide. This uncleaned grain falls on to an inclined screen O. The whole is air tight above to the blower, which is placed on the opposite end of the air tight trunk, or it may be termed "trunks." There is no way for the air to get in but under the screen O, passing through it, when the blower is in motion. K, is the hopper into which falls the very light grain or those impurities not lighter than the chaff. J, is a slide to let them out. L, is a case through which the chaff is blown after being drawn down the trunk D, and through the blower. M, is a slide to regulate the power of the blower. The trunk F, is wider at the top than bottom so as to have a stronger current exerted upon the screw.

The blower being set in motion a vacuum will be formed in the trunk above, therefore a current of air will rush from below through the screen carrying up the stuff specifically lighter than the good grain, the power of the blower being regulated for this purpose. According as the impurities are forced to a distance above the centre of gravity, so is the power to elevate them required to be greater. By this machine, the different qualities of grain and the impurities are separated, more distinctly upon the principle mentioned than by any other. The good grain is deposited in a grainary by itself, the very light in the hopper K, and the chaff completely driven out of the machine.

The Patent for this machine has been issued and is on our list of this week.

Improvement on Railroad Trucks.

Mr. Robert S. Lytle, of Fulton, Hamilton Co. Ohio, we have been informed, has taken measures to secure a patent for some valuable improvements in the construction of Railroad Trucks, whereby the price of construction with the same strength of truck, will be considerably reduced, while the body of the car, with the same diameter of wheels as are now used, will be brought about six inches nearer to the track. This is a great deal in cars heavily or lightly loaded, to make them run steady.

Zincographic Printing and Engraving in Colors.

We noticed, a few days ago, the transfer of copper and steel engraving to zinc plates, by Mr. Bourquin. A German artist, Mr. Louis Rosenthal, has taken a step far in advance of this, and has presented for our inspection some beautiful specimens of Zincographic painting and engraving in colors. The engravings are prepared upon zinc plates by Rosenthal from designs by artists. The printing in black from zinc plates have been practised in Europe, but the mode of coloring is an invention of Mr. Rosenthal. One of the specimens is a hawthorn flower and fruit from nature, arranged for an ornamental border, which has received ten different impressions and is beautifully painted. Another is an original design of grass and flowers, arranged for cotton printing; another is a design in chalk of a frieze from an ancient painting at Pompeii. This is an important improvement in the arts.

[The above is from the Philadelphia Ledger. We were shown some splendid specimens of Zincography about four years ago, since which time we heard no more on the subject until now. We hope to see the art prosper and flourish, and by the above paragraph there is every prospect of our hopes being realized.

New Electro Magnetic Clock.

Messrs. W. T. Henly and D. G. Foster, philosophical instrument makers in Clerkenwell, England, have lately secured a patent which they call a mode of imparting motion to a train of wheel-work, with or without an auxillary power, for the purpose of giving correct time, by means of magneto-electric machines, or voltaic batteries, near or from a standard time-keeper at a distant station.—In this case, a very neat arrangement of wheel-work is used for regulating the clock by the induced electric currents, in connection with a spring and fusee, only one hand being made use of, instead of two, to show the time upon the dial, the face of such dial being marked out as usual with the hours; between the figures, representing the hours, are also marked every five minutes, that the time may be read off with the same facility as with two hands. This arrangement the patentees also propose to apply to all ordinary clocks. The spring and fusee may be dispensed with, if desired, and motion given to the clock by currents derived from a voltaic battery. Two circuit reverses of a peculiar construction, for this purpose, are described; the first is attached to the escape wheel arbor, and consists of two brass segments, fixed round the arbor with ebony, or some other non-conductor, and connected with the arbor by means of small metal screws. Two brass flanges, fitted with platinum points, dipping in a cup of mercury, are also fixed to the arbor. The segmental pieces have also platinum points which dip into other cups of mercury, all of which are properly connected by wires with the battery. By this means, it will be seen that at each revolution of the arbor, the circuit will be completed twice and broken.—In the second arrangement, the reverser is placed upon the pallet-arbor; it consists of two isolated arms, placed across the arbor, one of which is in metallic connection with the arbor, and the other with a cup of mercury connected with the battery. The ends of these arms carry platinum points, which, as the pallet vibrates, alternately dip into the right and left hand cups of mercury, the cups being connected with each other by transverse wires.

Triumph of American Industry.

During the past week we have had our attention called to another triumph of American manufacture, that of producing French bareges. For the entire season our auction rooms have been crowded with these goods. All thought that the Frenchman had catered wonderfully in designs, peculiarly suited to the American taste, as well as to the prevailing whims, until one of our jobbers called upon an importer of whom he had purchased a case of bareges, "to arrive;" his design was to inform him if not delivered soon he would withdraw from the purchase. The importer was out, and the salesman, who was not so well posted as to the importation informed the jobber that they would soon be forthcoming, as his employer was then absent at the printworks urging up the work. Here then was the secret of the whole besiness exposed; the tissues were imported in the grey, and with the tissues came a workingman accustomed to the preparation of colors for this kind of work. A bargain was immediately struck with the celebrated printers, Messrs. Dunnell & Co. and all the bareges which have paid a profit to the producer are Yankee printing on imported cloths.

[The above is from the New York Dry Goods Reporter. We are glad to see our printers and manufacturers paying more attention to the producing goods of a superior quality and design. Messrs. Dunnell have exhibited the right spirit, by expressly, as we have been informed, employing French color makers to carry out the system.

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NEW YORK, JUNE 30, 1849.

To our Contemporaries and Subscribers.

No paper ever published in our country, has been so deeply indebted to contemporary journals, as the Scientific American. It has always been respectfully and favorably noticed, and without a single exception recommended to the favor of the public. Occupying a field perfectly distinct from the generality of our newspapers, it never can interest the majority, although it is useful to all and would be of great benefit to every family. For the present extended circulation of the Scientific American, the greatest of any other paper of the same nature in the world, we are much indebted to our brethren of the press, for their frequent favorable notices of us. This has been the means of calling the attention of hundreds who desired such a paper as ours, but who knew not where it was published, or whether such a paper had an existence or not. Our circulation does not interfere with that of any other paper, as our subscribers must of necessity be selected from those who have a taste for useful reading, unconnected with the passing news of the day, and presenting no light passion stirring literary articles which are readable to almost every person for the moments' gratification; our circulation therefore is singular. It is spread like a thin sheet over a great expanse, like a cloud resting on the bosom of the Pacific. In the remotest corners of our land—in places almost unknown to have an existence, we have subscribers. In Mexico, Brazils, Bermuda, the West Indies, Oregon, California, the East Indies and the far off Isles of the sea, the Scientific American is known. Our circulation is daily increasing,—as we have spared no pains to arrive at that point so essential to successful newspaper enterprise, viz. the first journal in its line—the first to present the latest news of inventions, improvements in science and art, and matter relating to patents. As it requires as unremitting attention to retain, as to gain popularity, we have adopted "diligence" as our motto, and as we have now dispensed with the services of every travelling agent, (some of them excellent men) for the causes mentioned in our last week's number, we will now be more indebted than ever to our contemporaries for whatever favorable notice they may take of us.

To our present subscribers, we would upon the terms of friendship, solicit your influence in the cause of science likewise. To you we are indebted for support, and by your encouragement, our country has a weekly paper devoted to science and the practical arts, which periodicals of other nations have said "does honor to the Republic." The expenses of such a paper are great, and as our present volume shows that we are still improving, we feel grateful for every helping hand. While we say this much, we also have the republican independence to state that every subscriber added to our list by a friend, will get full value for his money, he will receive the full benefits of his investment. We should like a circulation four times as large, as what we have at present. Our country has a population capable of giving us this. We would like, as a matter of national pride, to place the Scientific American far, far above any journal of the same kind in the world. This can be done in the most easy manner, without any grants or favors, but the good will of the people exhibited by twenty thousand new subscribers, folding up their subscriptions in letters and sending them to us through the Post Office.

A Presbyterian Church in Italy.

On the 1st of May, a Free Presbyterian Church was opened for public worship at Leghorn, in Italy. About 150 persons were present at the opening, all, with two or three exceptions, British. Rev. R. W. Stewart of the Free Church of Scotland, officiated.

History of the Rotary Engine.

We have concluded our history of the Rotary engine, and a new series of articles commenced this week, on the "glass manufacture." Our history of the rotary engine is the most complete in the world; since the commencement of this volume, we have published 67 engravings of rotaries and many of these derived from sources not accessible, we believe, to any other periodical. We could present a number more, but our history will be none the worse for their absence, although some of them are but recently patented We have received information by letter of a very excellent rotary invented by a Mr. Palmer in Greenbush, opposite Albany, N. Y. We intended to have given two cuts of it, but the requisite drawings did not arrive in due season.

In conclusion, the question might arise in the minds of many of our readers "what does the Editor of the Scientific American think of rotary engines himself." A fair question indeed, and we will answer it fairly, by stating, that we have never seen a rotary that pleased us so well as a reciprocating engine, and we believe never will. The leakage of all rotaries, their complexity &c., render them in our eyes very inferior engines. How easy a circular piston is packed, how beautifully adapted it is to slide in its concave jacket without a leak, and with but little friction, if all the parts are truly fitted, there is no loss by the crank as some erroneously suppose. A vibrating engine, is one of the most simple affairs in the world, and no person after seeing one of them in operation, would ever waste time inventing on rotaries. Our object in publishing the history of the rotary engine was to throw light upon the subject, in order to stop many men of real original mechanical genius from wasting their time. If we have succeeded—our object is accomplished.

The Telegraph Patent Decision.

"The Western correspondents who send despatches through the telegraph in relation to the recent decision of the Circuit Court, Kentucky, in respect to the case of Morse vs. O'Rielly misrepresent the matter. The decision does not touch the question of Morse's rights as an inventor. It merely goes to declare that an injunction obtained for one specific thing does not cover any other thing not named in it; that an injunction obtained by Mr. Morse against Zook & Barnes' instruments is not good against Bain's instrument. Similar proceedings must be instituted against each respectively. This, so far from allowing Mr. O'Rielly to use Bain's instrument in infringement of Morse's just rights, as the correspondents assert, only changes the mode of procedure on the part of Mr. Morse, who will apply for a special injunction against Mr. Bain as soon as he attempts to invade the former's rights. It is surprising that so many of the press of this country will be found upholding the attempts to deprive one of our own ingenious countrymen of his rights, because they allege his patent is a monopoly.—All patents, in one sense, are monopolies. They are exclusively enjoyed for a term of years by the inventor; but in this respect they are no more monopolies, in the odious sense of the word, than is the exclusive use of any other kind of property that a man's industry has created. They are monopolies for the public good, and the inventor only derives his profit from the public using his invention. The policy of the law is to encourage just such monopolies."

The above is from the Philadelphia Ledger, and it states the case truly in relation to Prof. Morse's patent. No person or persons should be led astray by the decision rendered, to suppose that the *electro magnetic* telegraph can be used without the consent of the Professor. Mr. Bain's invention however, does not depend on electro magnetism—no magnet is used. Those who complain about patent monopolies, should always place themselves in the same position in which they were before the monopoly complained of was invented.—Our country, yea the world is deeply indebted to the ingenious Morse for his invention, and should not find fault with the just rights which are only shielded, and that not very effectually, by the patent Laws. What would the world be without patent laws! Why every man would keep his invention secret and few would enjoy its benefits and perhaps the secret would die with the discoverer, without the world enjoying the least benefit from it. The public should be content to let the inventor enjoy his patent rights in peace, as at the end of 14 years it becomes public property, and here we would give that gentleman, the public, a few words of advice viz. *not* to infringe a patent during its term of *existence*, because every single case of infringement renders the chances ten to one that the patent will be extended beyond the first term. This is right; people should be taught to respect the rights of others

Water Engine and Air Tubes.

Papin, the celebrated French engineer, once tried the plan of pumping water from mines by the power of a distant waterfall applied to a wheel to work a series of force pumps, by which air was to be condensed into a reservoir. From this reservoir a close tube some miles in length was to be carried over hill and valley from the water wheel. He supposed that the condensed air would travel along this tube, and could be applied at the mine to work the pumps there and raise the water.—This invention was tried on a large scale in Westphalia, and such an engine was at one time erected at one of the mines in Wales, England, but neither of these two machines could be made to work at the useful end. The condensers at the wheel worked powerfully, but the blast at the distant extremity of the long pipe would scarcely blow out a candle, and although it had been calculated that the condensation would be transmitted along the tube in less than a minute, yet by actual experience—the testing of it, the slight impulses took three hours to travel along its tubular way. Another attempt was made by reversing the pumps and the effect of exhausting the tube ws tried, but this proved as fallacious as the other, so the whole project was abandoned.

Those inventors of exhaust mail tubes may gain some good hints from past experience. Every vain theorizer on this subject has supposed that since air rushes into a vacuem at the rate of 15 miles a minute, that such must be the velocity of a piston in the inside of an exhausted tube. But this is not so for the velocity of impulse decreases as the column of air lengthens, and consequently the longer the tube the slower is the motion of the column of air. No air tube to convey packages any great distance could operate successfully.

Arabian Cattle.

Lieut. Lynch brought with him from Syria, a male and female of the beautiful Khaisi breed of cattle, which he presented to the State of Virginia. The Legislature of that Commonwealth, in turn, presented them to the Governor, to dispose of at his discretion, to that farmer within the State, whom he should judge as most likely to secure the propagation of the breed. Governor Floyd, accordingly gave them to Col. James Castleman, of Clarke county. The cattle were lately exhibited at Washington, D. C., and a spectator thus describes them in the N. Y. Herald:—

"The khaists are, respectively, eighteen and sixteen months old, and weigh, the bull 950 pounds, and the heifer 650. The bull is 4 feet 10 inches high, and 10 feet 4 inches in length, from the nose to the end of the tail—the heifer of a proportionate size. They are the most beautiful animals of the cattle kind we have ever seen. Their limbs are as delicate as those of a gazelle, yet strong and well set as those of a race horse. Their heads have something of the elegance of outline of a deer; their nostrils are as thin and flexible: their feet are broad and flat, yet delicate, their tails, thick and flat at the insertion, taper down to the thinness almost of a whip lash, ending in a long tuft of silky hair. They are of a deep shining bay color, and their horns, which are just sprouting, are black as those of a buffalo. When full grown, they are said to stand seven feet high, and the cows are said to yield three half bushels of milk a day."

The stock of the valley of Virginia, it is believed, will be much improved by the introduction of this new breed. Col. Castleman values the pair at $10,000.

Lightning Rods.

It appears strange to me that so few people use lightning rods. Now that the laws which govern electricity are so well known. No one can doubt their efficiency in protecting life and property, and removing all apprehensions of danger during thunder storms.

I have specially noted the amount of cases of damage caused by lightning for over thirty years, and have not heard of one case of injury to any person by lightning while in a building or vessel protected by any kind of lightning rod. Mr. E. Merriam, of Brooklyn, N. Y. has republished the Report of the British Admiralty, for a period of over 25 years, showing that in 90 cases of the striking of naval vessels by lightning, no injury was sustained by any person or persons on board when the conductors were up. The same statement has been given to Mr. Merriam by the Secretary of our Navy. Mr. Merriam also published an account of 59 persons killed by lightning between Jan. 1st and July 30th, 1843, all taken from the columns of one newspaper. He also registered an account of 50 deaths from the same cause in 1845.

The wires used in the British and American Navies for lightning rods are about 5-16 or 1-4 inch in diameter. The electric telegraph wires that conduct electricity hundreds of miles, are less than 1-8 of an inch. Hence the evidence that a small rod, costing but a trifle (say $1,50) is of sufficient size for ordinary buildings.—It often happens that more than one rod is required to fully protect a building; as it is calculated that a rod attracts only twice the distance every way round, of its height above the object to be protected. There is no particular nicety required in preparing the rods, or putting them up. Any iron or copper rod, rusty, tinned or painted, pointed at the top, continuous and extending into the ground to moisture, and fastened with wood or any bad conducting substance next the rod, and rods enough to protect the distance required, is a good general rule. According to my observations there is about 1000 dollars worth of property destroyed, to the death of every person killed by lightning.

Shoreham, Vt. C. Rich.

Missouri Hemp Crop.

The growing hemp of Missouri is said to look well, and a larger area has been sowed in this article, in the present season, than was put in last. One of the chief hemp counties is Platte, and a correspondent of the St. Louis Union, who is collecting facts as to this year's and last year's crops, for the purpose of comparisons, reports as seeded in that county, in 1849, 2512 acres—in 1848, 1623, showing an increase, this year, of 889 acres. This looks well, but the army worm had commenced its ravages in Platte county.

A Theory Spoiled.

The beautiful plan proposed by some of the Western men, and on which the Western editors have been speculating, of making the Ohio river navigable at all seasons by turning into it the waters of Lake Erie, has been permaturely spoiled by a philosopher in the Cleveland Plaindealer, who says that "the Ohio river is about 265 feet above the level of Lake Erie," and proves it by calculations.

Culture of Grapes in Ohio.

It is stated in the Report of the Agricultural Society for the county of Hamilton, O., that not less than five hundred bushels of Catawba and Isabella grapes were sold in Cincinnati, during last season, for "table use"—the price $3 to $4 per bushel. But the quantity sold for the table is said to have been inconsiderable, compared with the quantity used in the manufacture of wine. The grape culture is profitably carried on in the vicinity of Cincinnati, on the roughest hill sides, which are of but little value for the ordinary purposes of agriculture.

Five persons have lately died at Blairsville Pa., by drinking root beer, made by mistake from wild parsnip instead of roots of sweet myrrh and sarsaparilla, and some 16 or 18 persons are still suffering from its effects. A Mr. Genter, the maker, was a victim, and Sam'l. Horsac and Mr. Dougherty—also victims.

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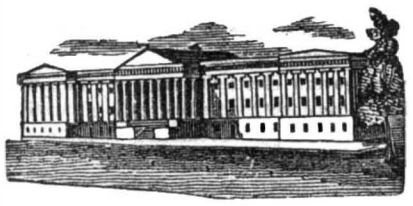

LIST OF PATENTS.

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending June 19, 1849.

To B. F. Blodget & H. B. Horton of Akron, Ohio, for improvement in Reed Musical Instruments. Patented June 19, 1849.

To D. L. Walker of Roxbury, N. Y., for improvement in Washing Machines. Patented June 19, 1849.

To Alexander Bond, of Philadelphia, Pa., for improved Sculling Propellor. Patented June 19, 1849.

To E. F. Martin, of Rockport Mass. for improvement in Cooking Stoves. Patented June 19, 1849.

To Wm. Ball, of Chicopee, Mass, for improved Gold Washers. Patented June 19, 1849.

To A. Palmer, of Brockport, N. Y. for improvement in Grain Drills. Patented June 19, 1849

To T. W Harvey, of New York City, for Rotating Tumbler Gun Lock. Patented June 19, 1849.

To G. E Gill & J. B. Tillinghast, of Chillicothe, Ohio, for improvement in Churns.—Patented June 19, 1849.

To John M'Carthy of Somerset, Pa. for improvement in Carding Machines. Patented June 19, 1849.

To Jacob J. Mann & H. F. Mann, of Clinton, Ind. for improvement in Grain Carriers for Harvesting machines. Patented June 19, 1849.

To J. F. Weishampel of Baltimore, Md. for improvement in Revolving Horizontal Coal Grates. Patented June 19, 1849.

To E. Myers, of Carrol Co. Md., for improvement in Seed Planters. Patented June 19, 1849.

To Charles Austin, of Concord, N. H. for improvement in Melodeons. Patented June 19, 1849.

To S. B. Francisco of Reading, Pa. for improvement in Atmospheric Churns. Patented June 19, 1849.

To B. D. Sanders, of Brooke Co. Va., for improvement in Winnowing Machines. Patented June 19, 1849.

To Benson Owen of Seneca Falls, N. Y. for improvement in Self-regulating Dampers for Stoves. Patented June 19, 1849.

To Roswell Wilson of Albany N. Y. for improvement in Cooking Stoves. Patented June 19, 1849,

To J. W. Hoffman of Philadelphia, Pa. for improved lever to be placed on a railroad track and acted upon by the wheels of cars or Locomotives. Patented June 19, 1849.

To Edmund Morris, of Burlington, N. J. for improved Door Holder. Patented June 19, 1849.

To J. H. Patten, of New York City, for improvement in Drying Grain. Patented June 19, 1849.

RE-ISSUE.

To R. D. Granger, of Albany N. Y., assignee of E. Johnson & D. B. Cox of Troy N. Y. for improvement in Cooking Stoves. Patented July 22, 1845. Re-issued June 19, 1849.

True Heroism.

A missionary of the American Board of Bombay, having acquired a thorough knowledge of the Mahratta, the English East India Company offered him a salary of $13,000, if he would relinquish his calling and aid them in writing and making contracts with the natives. On his peremptory refusal, they offered him $50 per week if he would afford them occasional assistance, two hours in a day. This offer he also rejected, saying no one could tempt him to relinquish the work he was sent to perform.

The Springfield, Mass. Republican announces that a coal mine has been found on the premises of Edmund Palmer, Esq. of that place. The coal is said to be of fine quality.

Richard Arkwright.

The general fate of inventors has been singularly unfortunate. Many have struggled through life against the ills of poverty and neglect, and but few of them have enjoyed the benefits or fruits of their genius. The difficulties of introducing a new improvement, although valuable, are often very great and frequently lead to embarrassment and ruin, although supported with considerable means.—And the inventors who do succeed are generally the objects of envy—the world seeks to deprive them of their justly earned honors, if they fail to render their labors and inventions of no avail by chicanery and fraud, seldom do inventors reap a harvest from the seeds they have sown.

The person whose name stands at the head of this article was a splendid exception to this result, not that he had not enemies to contend against, who exerted every influence and employed both calumny and wrath to rob him of honor and profit—not because he was rich, for he was of the humblest class, but he lived down the malice of foes and rose above their machinations to a princely opulence, and was at last honored with Knighthood and acknowledged "a public benefactor."

Richard Arkwright was born at Preston in Lancashire, England, in 1742. He was the youngest of 13 children, was brought up a barber, and supported himself at this employment till he was more than 30 years of age, and here let us digress somewhat from the chain of this narrative. "It is too often the case that mechanics and artisans laugh and despise the labors of others, not of their own trade, who attempt to improve upon some part of it, they consider them as nothing better than ignoramuses." "What do they know about this and that branch,—they have never learned it," are common expressions. There is some truth in attributing to new amateurs an ignorance of many principles, but still, they are the very class who are apt to strike into an original path out of the beaten road. History furnishes us with illustrious examples. Franklin was not by profession an electrical engineer. The first Herschell was not by trade a maker of lenses. Watt was a philosophical instrument maker. Col. Bentham was not a practical mechanic. Fulton was a painter and Arkwright a barber.

It is not known how the mind of Arkwright was first directed to make an improvement on machinery for spinning cotton, but it is supposed that he took interest in the complaints of his neighbors in Preston respecting the defective supply of cotton yarn. At that time James Hargrave, a weaver in Lancashire, invented a new mode of carding and then invented the spinning jenny. The spinners took alarm at his invention and destroyed his establishment, after this be removed to Nottingham but persecution awaited him there also, and melancholy to relate this ingenious man died soon afterwards, but not in great misery as is commonly reported.

During the persecution of James Hargrave, Arkwright was making efforts to change the process of spinning then in use, but owing to his want of mechanical skill, it was difficult for him to get machinery combined to operate according to the idea he had formed in his mind. In 1767 Arkwright formed an intimacy with John Kay, a watchmaker of Warrington, who was well acquainted with mechanical combinations and who made a machine according to his suggestions, but according to his opponents, he gave Arkwright the first good idea. But after the first machine was made Arkwright spent five years in improving upon it to make it perfect—none before this had been successful. He then entered into a partnership with a Mr. Smally of Preston, his native place, but the spinners rose to put down their machinery and their establishment was ruined. He then removed to Nottingham, formed a partnership with Messrs. Shute and Meed and took out a patent for his *spinning frame* in 1769. He then erected his mill and set it in motion by horses. In 1771, he erected one at Cromford, Derbyshire, to be moved by water; Arkwright's invention was for drawing and spinning the cotton by rollers, a grand idea and which could in no way be derived from the old wheel—it was a most original thought. His first patent was called an improvement on the *water spinning frame*. It is said that he got his first idea from seeing iron rolled in a rolling mill. When Arkwright was just beginning to enjoy some benefits from his invention his patent was contested in 1772, on the ground that his improvements were not original. Every effort of malice, envy and selfishness was exerted to resist his rights, but he prevailed over all opposition and afterwards his patent was undisputed. After this he made more improvements, and brought his machine to its highest state of perfection in 1775 and took out another patent. This second patent after severe litigation was cancelled in 1785; after this he had indeed many difficulties but success seemed to smile on his efforts. For a short time he formed a partnership with David Dale, Esq. of Lanark Mills, Scotland,—the grandfather of the Hon. R. Dale Owen of Indiana. Of Mr. Dale who was one of the best of men, Mr Arkwright was very fond, as he was of all his countrymen who generally appreciated his ingenuity more than his own. It may be said that from 1772, the success of Arkwright in making an abundant fortune was but little interrupted, for from that time he received a tribute for each spindle and the rapidity with which they multiplied after the first introduction, was something like the spreading of a flood. Very little more may be said about him. He saw his machine first driven by horses, then by water power and he lived to see the invention of Watt successfully and well applied to them likewise. He was made a Knight with the title of Sir Richard, in 1786, and he died in 1792. He was of a hasty temper, but of great mental powers, and he exhibited amid his rank and wealth his old burly frankness. Having said so much in favor of Richard Arkwright, we must admit, that his was not the first roller spinning frame, although we believe the idea was new with him. In 1738 Lewis Paul took out a patent for spinning by rollers but his specification was very bad—not clear, while Arkwright's was good and clear. Since Arkwright has gone to the tomb, the spinning by rollers is claimed to have been the invention of John Wyatt of Birmingham, England, who was one of the witnesses of Paul's specifications, but to Arkwright belongs the merit of successfully completing and applying the invention of spinning yarn by drawing and twisting between rollers. Roller spinning however is greatly improved, now. Arkwright would still see his principles but scarcely know the features, of his machine, if he was to enter one of our factories.

The whole world has been benefitted by his invention and no country more than America It well becomes us then as a people to appreciate the benefits conferred upon us by the inventors of useful inventions.

For the Scientific American, Butter.

The cream which rises to the top of milk after being skimmed off and churned yields about 4.5 of butter to every 100 parts, it is of a white, or yellow color and has an agreeable smell. Milk is composed of butter, casein, sugar of milk, several salts and water in variable proportions. Butter appears in the form of small globules nearly alike in size, and transparent, and is not soluble in water, and it oxidises or becomes rancid by exposure. It is composed of margavin, olein, butryrin, caprone, and caprines, and some say stearin, a substance found in tallow. By steaming butter a certain time, or keeping it at a heat of 70° degrees for about a day and a half, the stearin, and margavin can be seperated by filtration, as they graduate. The liquid portion is then acted upon by alcohol in which the butryrin, caprone, and caprine are taken up, and the olein left behind.

The making of butter is known to every person, but there are few who know any more about it, than merely, that by churning, *butter is made*. But the true theory is this, that agitation breaks the globules of butter and makes them unite in a mass, and the introduction of air during the churning aided by a heat nearly up to the fermenting scale, occasions the formation of lactic acid which coagulates the casein and assists in the seperation of the butter. In Summer, there is frequently too high a heat in the milk or cream which prevents the ready coherence of the butter. In that case, after the butter is formed a piece of ice introduced into the churn readily brings the particles into contact. After butter is made or separated from the milk, the grand object to be attended to, is the entire separation of the casein, which is the substance that so readily imbibes the oxygen and makes rancid butter. Butter ill-beaten, squeezed and packed, will not be good in an ocean of salt; butter well squeezed to drive out all the casein and milk, keeps best. This is the great secret of making butter to keep, and the superior flavor of some kinds of butter, is more indebted to its absence of casein than any chemical mixture introduced into it. In some dairy districts the butter is trampled with clean tidy milkmaid's feet into tubs with false bottoms—perforated with fine holes through which the casein is pressed, (a cloth being between) and the pure butter retained, which is then lifted and packed into clean firkins. Butter so treated is sure to be good.

Formation of Character.

The mind of man receives its first bias when the seeds of all our future action, are sown in our hearts, and when causes in themselves so trifling as almost to be imperceptible, chain us to good or bad, to fortune or misfortune forever. The character of man is like a piece of Potter's clay, which when fresh and new is easily fashioned according to the will of those into whose hands it falls; but its form once given and hardened, either by the slow drying of time, or by its passage through the ardent furnace of the world, and one may break it to atoms, but never bend it again to another mould. Our parents, our teachers, our companions, all serve to modify our dispositions. The very proximity of their faults, their failings, or their virtues, leave as it were an impress on the flexible mind of infancy which the steadiest reason can hardly, no more modify, and years themselves never can erase.

Gold and Silver Point East and West.

Every horse shoe shaped magnet has one of its ends a north pole, and the other a south pole. If such a magnet be made very powerful by means of a galvanic battery, all substances whatever, if made into bars and suspended over it by a delicate thread, will point either to these north and south artificial poles or else in a direction equally between them, that is, east and west. Gold and silver point in this latter direction, as also do many others. This has lately been discovered by Faraday in London, who has named the influence Dia-Magnetism. In order to produce it, the artificial magnet must be very powerful.

An Author's Prediction.

Walter Savage Landor, one of the oldest living English authors, in a recent letter to Lord Dudley Stewart, asserts that the world is at the commencement of a crueller and longer war than history has recorded; a war of civilization against barbarism, of freedom against despotism, of nations against cabinets. He adds that in twenty months, or earlier, Russia will be on the frontier of France, or perhaps within it.

[Being neither a prophet nor the son of a prophet, we do not step out of line very often to speculate upon common events, but in this case we beg leave to disagree with Mr. Landor. Time will tell who is prophet.

LITERARY NOTICES.

The Bankers Magazine.

This Monthly Periodical, is a very excellent one, and one that is instructive to every person. By it we learn that the Bank Capital of this city is $26,149,910 and that of the whole State, $144,330,553 South Corolina has the greatest concentrated capital of all the States, viz. $11,431,183, divided into six different places only. The Bank Capital of New York city is greater by $6,436,029, than that of all Pennsylvania. Massachusetts has a capital of $33,285,000 being $9,135,090 more than this city.

Godey's beautiful Ladies Book for July, has been laid on our table by H. Long & Bro., agents for this city. It is superbly embellished, and exceeds in quality and quantity any previous number. What a volume of praise has been heaped upon this grand work, it cannot be excelled.

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TO CORRESPONDENTS.

"C. A. & Co. of N. Y."—The box containing models reached us safe, and was forwarded to the Commissioner on the 23d inst.

"T. C. M. of Ky."—Your letter containing $8 came safe, and each subscriber has been credited as per request. We judge from your letter that you have been a sufferer from the present patent laws. You will see from several numbers of the Sci. Am. that we have been battling their imperfections, and if possible to bring about a healthy system of reform.

"E. S. S. of Buffalo."—We must see the model before we can fully determine what you can claim as new.

"W. H. of Worcester."—Messrs. Mayer & Co. paid the amount of your draft, and we have placed it to your credit. We are much obliged.

"C. H. S. of La."—Your subscription expires with number 52 this vol. The machine for moving fans, constructed on the clock principle, referred to, is the invention of John Edwards, a worthy and industrious mechanic living in this city.

"A. W. of Me."—Your model was handed to us by Mr. O. S. Fowler, and has been examined. We do not think its operation is clearly shown in this model. We have seen a similar plan invented by Mr. Foster, of Mass. Please give us a full explanation by letter.

"J B. of Mich."—We do not see anything essentially new or patentable in your "Hydraulator" and would advise you to spend neither time nor money in making an application. We have a plan now in this office, very much like yours.

"J. G. S & Co. of Ohio."—We know of no plan to construct a cart with three wheels that could in any respect equal one of two wheels, neither can a cart with three or four wheels be made to equal a two wheeled one for carrying heavy loads.

"H B. K. of Providence."—We are under the impression from your description that the invention is similar to the one referred to in 36. We can decide this point from a model or suitable drawing properly explained.

"R C. of Mass."—We are not in position to do anything with those articles referred to in yours of the 16th inst. We are pleased with the success of your application.

"J. M. D. of Ohio."—The best thing you can do is to get a cut of your invention published in the Scientific American. How can the public know about it unless you do this.—The cost will only be $7, and it will do more good than expending hundreds of dollars by travelling through a few places. Nothing can now be done without advertising, and the public look to our columns exclusively for information of that kind.

"W. H. B. of Mich."—Don't be alarmed, but come on here with a serene countenance, and a generous flow of soul, and the Cholera will not disturb you. You can frighten yourself into it, in Michigan. The disease here is of a very mild type.

"M. S. Jr. of Vt" "W. D. of Mo." "A. R T. of Va."—Are informed that their specifications and letters of instruction, were forwarded on the 26th inst.

"J. P. of N. Y."—Come down and see us Joseph; we want to dispose of your business as soon as possible, and this is just the weather to dispatch matters of importance. We hope you are well.

"G W. T. of Mass"—$5 received. We shall write you as soon as possible.

"G W. P. of Mass."—If you are short of the necessary materials, to sign those papers, let us know and we will send on a batch by Express. We are anxious to present the application at the Patent Office.

"J. T. of Pa."—In the first place you had better satisfy yourself, that the Cultivator will perform well, its operation is not clearly explained in your letter and we are comparatively in the dark in regard to its merits. $1 received.

"Dr. S. Mc L. of N. Y."—Your favor of the 23d inst., reached us safe. As soon as the model referred to arrives, we shall take pleasure in presenting you our views and advice.

"J. M. B. of Wis."—Your plan of preventing accidents on Railroad Bridges is new and good, and could be patented, but it would never be a source of much profit to you.

"J. C. of N. C."—We have been so busy that we could not attend to your request before.

"L. V. R. of N. Y."—If you want your invention introduced, get a cut of it published in our columns.

Money received on account of Patent Office business since June 20th :—W. B. of Ct., $20; D. V. of N. Y. $10; C. R. of Mass., $12; W. D. of Mo., $30.

Hats.

Gen. Knox of 128 Fulton St., advertises hats as "light as a humming bird's feather." now this is no joke, for we have been accomodated with one of them, and they are really a luxury in these warm days when "old Sol" seems to have no mercy on human beings.—Patriotic individuals who are preparing for a grand demonstration on the 4th had better see that their heads are well covered, or they will get *Knox* over the cranium, that will produce the coup-de-soliel.

Advertisements.

TO INVENTORS.

THE SUBSCRIBERS offer their services to persons wishing to obtain patents in the United States or in foreign countries, and will prepare specifications and drawings and take all necessary steps to secure a patent.

From their long experience as practical mechanics, added to a thorough knowledge of the Patent Laws and acquaintance with the details connected with the business of the Patent Office, they trust they will be able to give satisfaction to their employers, both in the clearness and precision of their specifications, and in the promptness and ability with which they transact all business entrusted to them,

Persons residing at a distance may procure all necessary information, have their business transacted and obtain a patent by writing to the subscribers, without incurring the expense of a personal attendance at Washington.

Models can be sent with perfect safety by the expresses.

Rough sketches and descriptions can be sent by mail.

For evidence of their competence and integrity they would respectfully refer to all those for whom they have transacted business.

Letters must be postpaid. Office on F st. opposite the Patent Office. P. H. WATSON.
j30 4t* E. S. RENWICK.

TO INVENTORS.

THE Subscriber begs leave to inform inventors and others that he manufactures working models of machinery &c. in a neat workmanlike manner. Patterns of every description made for Castings.—Scroll sawing neatly executed. Mathematical and Nautical Instrument Cases of every description.

JOSEPH PECKOVER, 240 Water st. N. Y.
j30 3m* Between Beekman st. and Peck Slip.

The attention of Railroad, Steamboat and Manufacturing Cos. is invited to J. Cumberland & Brother's

PATENT WHITE METALLIC OIL,

FOR steam engines and heavy machinery of all kinds. For its durability, purity from gum, and superior anti-friction properties, as well as its great economy, it has received the approval of the following gentlemen :—

Messrs. John Corell, Congress Steam Mills, 172 Forsyth st.; J. P. & Thos. Cummings, Chelsea Mills, 25th st.; Hecker & Brother, Cherry st; John Jewett & Sons, 182 Front st.; R. Hoe & Co. Sheriff st.; James Payne, Brooklyn City Mills; James E. Fairbanks & Co, and many others who have been using it a long time with entire satisfaction.

Manufactured by J. Cumberland & Brother, Patentees, Elizabethport, N. J, to whom orders from a distance should be addressed.

ANDREWS & JESSUP, No. 70 Pine st. New York, Agents have constantly on hand both the Fluid and Hard Metallic Oil, put up in one to five gallon cans and barrels, at the Manufacturers' Prices. j23 4t*

WATER WHEEL FOR SALE.

A Breast Wheel about 10 feet diameter and 20 feet long with elbow buckets, built of the best materials, in a thorough and workmanlike manner, and has been in use about one year. For particulars address E. GORDON,
j23 tf Taunton, Massachusetts.

INFORMATION WANTED.

TO know the whereabouts of John Johnson a native of Scotland, and who sailed for this country from Belfast, Ireland, in 1835, and was shortly after a Pilot on the Hudson River. Any information concerning him will be thankfully received by,

MARTIN KENAN,
j16 3t* Cooperstown, Otsego Co. N. Y.

NOTICE.

☞ The Second EXHIBITION of the MARYLAND INSTITUTE for the Mechanic Arts, will be held at Washington Hall, in the City of Baltimore, from Thursday, 27th of September. to 13th October, inclusive. Machines, models, or goods sent to the address of H. Hazelhurst, Corresponding Secretary of the Institute, (expense paid) will be met with immediate attention, and every facility used to exhibit the same to the best advantage. j16 4m

TO IRON FOUNDERS.

FINE ground Sea Coal, an approved article to make the sand come off the Castings easily; fine bolted Charcoal Blacking; Lehigh fine Dust, and Soapstone Dust for facing Stove Plates, &c. &c.; also, Black Lead Dust, for sale in Barrels, by

GEORGE O. ROBERTSON.
m24 4meow* 303 West 17th st. New York.

FACTORY PROPERTY.

FOR sale at New Preston, Litchfield County, Conn. a Cotton Factory of about one thousand spindles and looms, in good repair, with a new water wheel and gearing, on a never failing stream of sufficient power to drive three thousand spindles, with land and tenements connected. A rare chance for making seamless Grain Bags, for which the machinery is well calculated. For further particulars enquire of W. B. LEONARD.
j16 3t* No. 66 Beaver St.

WATER POWER.

A Valuable Water Power capable of doing an extensive business, situated in Norwalk, Conn, is offered for sale. Enquire of L. M. Stevens, No. 146 Pearl St. New York. or of

J CAMP, JR., or W. C. STREET, Norwalk, Ct.
Norwalk, Ct., June 6, 1849. j16 4t*

A NEW PATENT MACHINE.

HAVING obtained a patent for a self-feeding machine to saw wood TWICE IN TWO at one operation, a model of which can be seen by applying to P. H. Watson, Patent Attorney, Washington, D. C I am now prepared to sell the right for the same, by States or smaller districts, as may best suit the convenience of purchasers. As this is a machine every where wanted, and believed to possess superior merit, it will be to the advantage of mechanics and patent dealers to attend to it.

All communications post paid, and addressed to the subscriber, will receive prompt attention.

DAVID BONNER,
j2 8t* Greenfield, Highland County, Ohio.

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Augusta, Maine, Oct. 28, 1848. o28 1y

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Patent Laws.—Subjects of Patents.

In carrying out the views expressed in my last article, page 312, we have only to look at the expansive field presented before us in the Act July 4th, 1836, which declares the subjects of patents to be "any new and useful art, *manufacture* or composition of mat ter, or any new and useful improvement on any art, machine, manufacture, or composition of matter." These phrases allude strictly to the practical—no natural principle being involved. Some have erroneously supposed that a principle could be patented, such as driving a loom by water, if the thing had not been done before. But it is very evident to any acute mind, that an invention in machinery consists in the manner of producing certain results—not the results themselves—for all that the water could do in reference to the power loom was merely to exert a power to drive it. The power in the water which is a natural principle, belongs to all, but a new way of applying that power is patentable, or a new product derived from water would be patentable, such as the manufacture of hydrogen gas by decomposing water by a galvanic current. Sir Humphrey Davy might have patented this.

There is however, in mechanical combinations a principle of action, which is very different from a property of matter. This principle of action is the most difficult to explain clearly of all the points in patent principles. No published work, does it, so as to be a correct guide, and we find the decisions of different judges to be various and unsatisfactory. The patent of Woodworth for planing and tongueing and grooving boards and that of Blanchard for turning gun stocks, have been fruitful sources of litigation, owing to ignorance of the principles of their actions. Where can we find their principles clearly and simply defined? Nowhere.—There is much public ignorance on this subject, or surely the Patent Office would never have granted so many patents that have been nullified at Courts of Law as infringements of these patents. The reason of this may be owing to that obliquity of mental vision, which is so well versed in "want of novelty" but which cannot comprehend similar principles when presented in different dresses. The policy of having granted those patents is right for all, for it is far more satisfactory to have these things fairly tested by legal process, than an exparte trial or a Patent Office appeal.

We have cited the law of Congress in reference to subject matters of patents. Every person can see the area of the shield which the law would throw over new inventions to protect them. We are afraid that in adjudicating upon aplications for new improvements, some of the Examiners look upon the law in the light which Pollock's rural peasant looked upon the moon, as a light "no bigger than his grandsire's shield." In such a case, (and there have been many such cases) the *guillotine* falls and the victim expires *legally*, a great consolation no doubt to the faithful executioner.

Under the legal construction of the law of 1836, and founded on the principles on which the laws are built, "a new combination of mechanical parts or instruments whereby a new machine is produced, though each of the parts be separately old and well known," is patentable. All machines are made of old parts.—There is no new part about any machine with which we are acquainted, that is not to be found in some other machine. The spinning frame of Arkwright was to be found in all the old rolling mills before Arkwright was born, yet his patent was good. it was a different application and produced a new result, owing to a little difference of arrangement.—It seems strange that such principles could be misunderstood, by our Patent Office, but they certainly are. Combinations and mysterious things to some men, and they can judge only of their nature by reducing them to fractions and substracting every thing from them excepting the last 0. A true soldier when condemned for misdemeanor likes to receive a soldier's death, and the inventor being naturally a sensitive being, likes not the edge nor the look of the *Jack Cade Blade.*

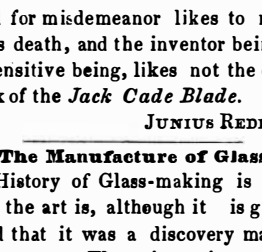
JUNIUS REDIVIVUS.

The Manufacture of Glass.

The History of Glass-making is not very old, but the art is, although it is generally believed that it was a discovery made a few centuries ago. The exhumations of Herculaneum and Pompeii have made us acquainted with one fact of a lost art, "Glass-making," which disappeared during the dark ages and was revived by the Venitians. Venice was anciently celebrated for her glass manufactures and was the first place where window glass was used. The art of glass-making was in far higher excellence two centuries ago, than many would be apt to suppose, yea, we question our superiority, and have no hesitation in saying, that for beautiful colors and fancy work, we were surpassed by the Glass artists of the sixteenth century. In 1699 a work was published in London called "Blancourt on the Art of Glass." It is a very curious book and informs us that many French noblemen in the reign of Louis XVI. were workers of glass, and they worked at the trade with their own hands. A change has come over the scene since then. The art was first introduced into England in 1557 and it was carried on by some of the richest noblemen in the land, the Duke of Buckingham in 1670 being one of the number.

There are two kinds of glass known by the name of "sheet and plate." The *sheet* is blown, the *plate* is cast. German sheet glass is blown into long *cylinders*, which are cut on one side and opened into flat rectangular plates. Crown glass is blown into globes and whilst it is soft, is opened and turned inside out by being rapidly spun round, the centrifugal force "flashing" the glass into circular plates each having a lump of glass in the centre. To this lump the tool is attached, and afterwards forms the well known "bullion" or "bull's eyes," so frequently seen in inferior windows.

FIG. 1.



There is nothing peculiar about the furnaces for sheet glass, and the crucible or "pots" in which the glass or metal is melted, they are in every respect the same as those employed for crown or plate glass; nor is there any very essential difference between the "frit" or composition of raw material for crown or sheet glass, excepting that the materials for the sheet are selected with a greater regard to purity. The mixture of sand, soda and lime, having been made in accordance with the peculiar views of the manufacturer, the "frit" is shovelled cold into the heated pots in which it is subjected to an intense heat from 10 to 20 hours, when it becomes of the consistence of common honey, when the impurities on the surface are removed by skimming, and an assistant plunges an iron pipe of about 5 or 6 feet long, and 10 lbs. weight into the semi fluid glass, and by turning it round gathers a portion of glass on the end of his tube; after this has become stiff by cooling, the process is repeated until a sufficient quantity is thus obtained, in the shape of an irregular sphere. The pipe is now cooled over a tub of water, and is transferred to the "blower," who, keeping it constantly revolving, lays the glass in the "block," which is a sort of wooden bowl partly filled with water. The peculiar shape of the cavity, and the motion given to the glass by the workman, cause it to assume a shape which he knows by experience to be best adapted to his purpose. It will no doubt seem strange that a piece of hot glass should be plunged into cold water, and this rarely fails to strike a stranger with astonishment, as knowing how soon hot glass is cracked by cold water. That the glass does not crack most probably arises from its non-conducting properties, as well as from its being so very hot and soft that it does not lose sufficient

FIG. 2.

heat, during the time it is immersed, to become brittle; the spheroidal state which water assumes when in contact with some bodies at very elevated temperatures, also tends to prevent the glass losing heat so rapidly as might be imagined, and the water, in fact, acts only as a lubricating substance between the soft glass and the wood, thus effectually preserving the surface of the former from being injured.

The mass is now in shape, fig. 1, and being blown into and slightly drawn out, by allowing it to hang down from the pipe, it assumes the shape of fig. 2, being a thick pipe a little

FIG. 3.

conical, terminated at the larger end by a mass of glass; this mass is again supported in the bowl, and by forcing in a strong blast of air, the workman causes the thick end to expand, when the whole presents the appearance of fig. 3, being a kind of short and wide bottle, with an enormously thick bottom; the sides being kept straight by the form of the hollow in the block. The upper part of the bottle, or the neck and shoulders, is called the "cap," and is of the same thickness as the whole sheet when finished. The cap being finished, the diameter of the bottle determines the future diameter of the cylinder.

These preliminary portions of the manufacture are carried on at the side of an intensely heated furnace, called the "blowing furnace," having several circular openings of much greater diameter than the bottle before described, which being lifted out of the water, is inserted through one of the apertures into the heat, whilst the pipe is supported on a hook fastened for that purpose into the brickwork at the side; the bottle soon becomes exceedingly hot, and when almost melting, is adroitly withdrawn and held down in a nearly vertical position by the workman, who stands on the edge of an opening called a "grave," and allows the bottle to elongate by the weight of its thick bottom, occasionally forcing air down the pipe, and assisting the force of gravity by swinging or vibrating the pipe and glass like a pendulum.

(*To be continued.*)

To Render Wood Durable.

In preparing wood for the purpose of building, saw it into such lengths as the occasion demands; next, plunge the planks or beams into a pond of lime-water. The pond is made thirty or forty feet long, five or six feet deep, sixteen or eighteen feet wide; and the bottom and sides are rendered water-tight. It is then filled with cold water. Before receiving the wood, a quantity of fresh-burned hot lime is thrown into the pond, which is well stirred with the water, to dissolve as much as possible of it. Into this strongly impregnated solution of lime-water, the wood, in the various shapes it has been sawn into, is then thrown. As lime-water absorbs carbonic acid, from the atmosphere, the lime previously held, dissolved in the water becomes insoluble, and is slowly abstracted from the water, and deposited at the bottom in a solid state, as carbonic of lime; hence the necessity of now and then throwing in fresh portions of recently calcined lime, that the water may be resaturated with the strongest solution of this caustic alkaline earth.

The timber remains in the water from two to three weeks. The lime is absorbed by the pores of the wood, and appears to destroy the albuminous and saccharine principles, or so changes them that the wood no longer affords the food on which worms subsist. The slight petrifaction which the wood thus undergoes, prevents air and moisture from penetrating it, and renders it almost indestructible. It should be thoroughly seasoned before it is used.

There are some rivers having the quality of turning *wood into stone*, such as a famous lake in Ireland. It is the presence of lime in the water that effects the change. If wood be saturated in strong alum and then dried at an intense heat, it is very durable, and more so, if a little copperas has been used along with the alum.

The Cause of Bad Teeth.

Dr Redfield says that the principal cause of bad teeth is the use of hot food and drinks.—He referred to the dislike which little children showed to taking food of a higher temperature than milk warm, and of the attempt of nurses to satisfy them, and said that by habitually taking food of too high a temperature the mouth becomes insensible of what would scald an infant. If the membrane of the mouth which is a comparatively poor conductor of caloric, suffered from this cause, the teeth suffered much more, for they were excellent conductors, and the heat being conveyed to the nerves of the teeth, caused debility and loss of vitality, and, of course, rottenness of the teeth. Food that was so hot as to burn the tongue, was thrust between the teeth and held there till it had parted with its excessive caloric, and this rendered the destruction of the teeth inevitable; and as the grinders were most subject to this influence they were the greatest sufferers. By a total reform in society, in respect to this simple law, Dr. Redfield believes man would be exempt from the toothache, and from the necessity of the substituting artificial teeth for natural ones.

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